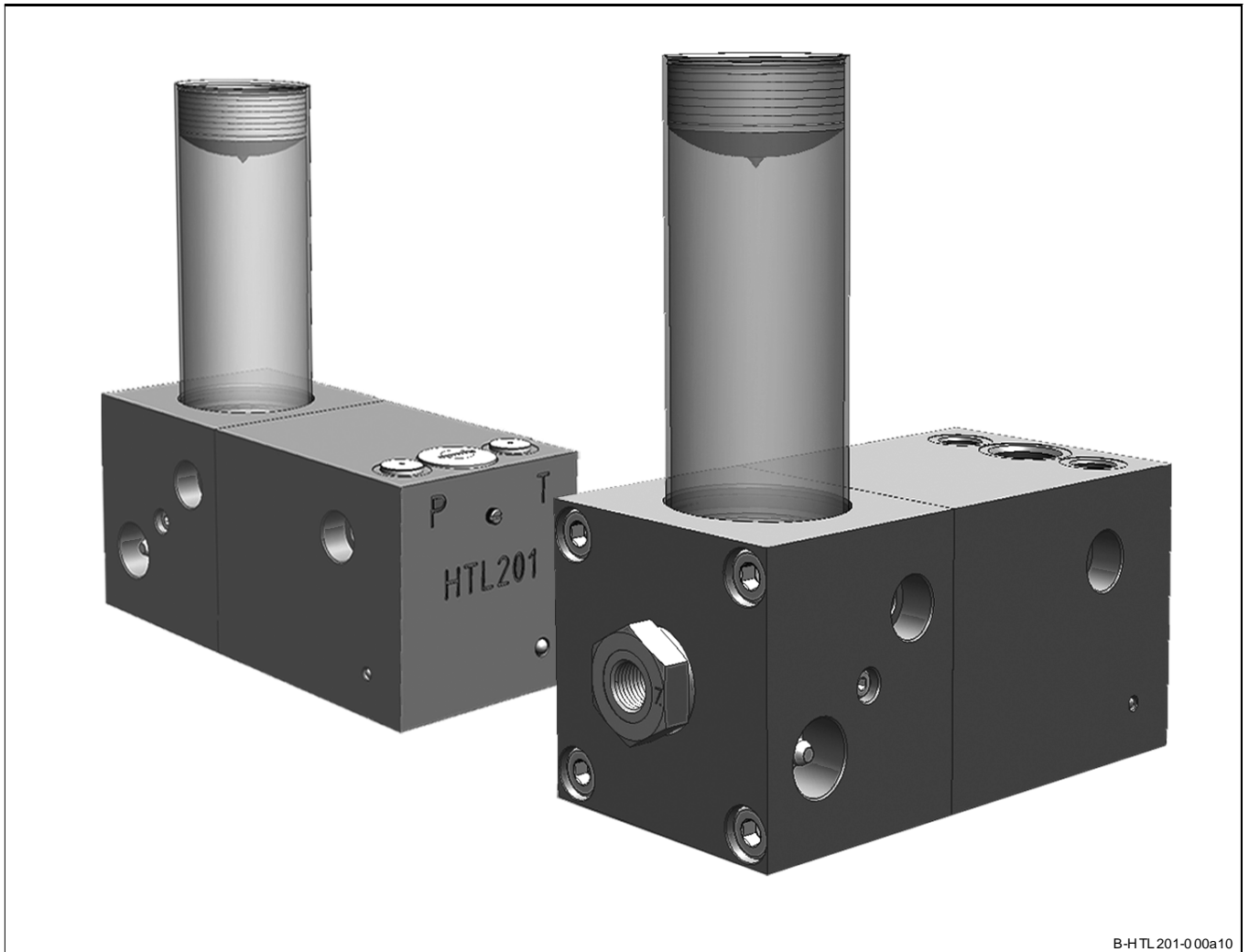


# ***Hydraulically Operated Lubrication Pump HTL 201***



B-HTL 201-0 00a10

810-53303-1B

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**For further information refer to:**

- Installation Instructions for kit of seals 542-34079-1  
2.0-30008-B08
- Installation Instructions for hose stud  
2.0-39000-A08

## Introduction

### Explanation of Symbols Used




The following description standards are used in this manual:

#### Safety Instructions

Structure of safety instructions:

- Pictogram
- Signal word
- Danger text
  - Danger note
  - How to avoid danger

The following pictograms are used in this manual and are combined with the corresponding signal words:

 1013A94	 4273a00	 6001a02
<b>ATTENTION</b> <b>CAUTION</b> <b>WARNING</b>	<b>ATTENTION</b> <b>CAUTION</b> <b>WARNING</b>	<b>NOTE</b> <b>IMPORTANT</b>

The signal words give the seriousness of danger if the following text is not observed:

<b>ATTENTION</b>	refers to faults or damages on machines.
<b>CAUTION</b>	refers to bad damages and possible injuries.
<b>WARNING</b>	refers to possible dangerous injuries.
<b>NOTE</b>	indicates improved operation of the device.
<b>IMPORTANT</b>	indicates special operating features of the device.

#### Example:



#### ATTENTION!

*When making use of other than the tested spare parts, serious damage may affect your device.*

*Therefore, for the operation of your device always use original parts made by Lincoln GmbH.*

Furthermore, you will find the following text symbols in this manual:

- Listing of applicable statements
  - Subpoint of applicable statements
- 1. Determination of the number or sequence of contents
- ➔ Procedural instruction

### User's Responsibility

To ensure the safe operation of the unit, the user is responsible for the following:

1. The pump / system shall be operated only for the intended use (see next chapter "Safety Instructions") and its design shall neither be modified nor transformed.
2. The pump / system shall be operated only if it is in a proper functioning condition and if it is operated in accordance with the maintenance requirements.
3. The operating personnel must be familiar with this User Manual and the safety instructions mentioned within and observe these carefully.

The correct installation and connection of tubes and hoses, if not specified by Lincoln GmbH, is the user's responsibility. Lincoln GmbH will gladly assist you with any questions pertaining to the installation.

### Environmental Protection

Waste (e.g. used oil, detergents, lubricants) must be disposed of in accordance with relevant environmental regulations.

### Service

The personnel responsible for the handling of the pump / system must be suitably qualified. If required, Lincoln GmbH offers you full service in the form of advice, on-site installation assistance, training, etc. We will be pleased to inform you about our possibilities to support you purposefully. In the event of inquiries pertaining to maintenance, repairs and spare parts, we require model specific data to enable us to clearly identify the components of your pump / system. Therefore, always indicate the part, model and series number of your pump / system.

## Safety Instructions

### Appropriate Use

The hydraulically operated lubrication pump model HTL 201 is designed for initial or subsequent retrofit installation. It is designed for:

1. the automatic lubrication of hydraulic hammers;
2. the automatic lubrication of hydraulically driven units.

The pump is able to deliver lubricants and chisel pastes up to NLGI-class 2 or oils from min. 40 mm<sup>2</sup>/s (cSt).

### Misuse

Any use of the hydraulically operated lubrication pump HTL 201 that is not expressly mentioned in this User's Manual will be regarded as misuse.

If the hydraulically operated lubrication pump HTL 201 is used or operated in a different manner other than specified, any claim for warranty or liability will be null and void.



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#### NOTE

*If personal injury or material damage occurs as a result of inappropriate operation, e.g. if the safety instructions are ignored or resulting from incorrect installation of the hydraulically operated lubrication pump HTL 201, no claims or legal actions may be taken against the manufacturer.*

### Exclusion of Liability

The manufacturer of the lubrication pump HTL 201 does not accept any liability for damages caused by:

- tardy replacement of the cartridges (lack of lubricant)
- poor lubrication due to air entrapments in the lubricant supply (e. g. after replacement of the cartridge)
- use of lubricants that are inappropriate or only conditionally appropriate for the unit or which are not pumpable
- inappropriate disposal of used or contaminated lubricants
- arbitrary modification of system parts
- use of unauthorized spare parts and lubricant cartridges, including the usage of refilled cartridges with non-approved or contaminated lubricants (loss of warranty).

### Regulations for Prevention of Accidents

- To prevent accidents, observe all city, state and federal safety regulations of the country in which the product will be used.
- Avoid the operation with
  - unapproved parts.
  - insufficient or contaminated lubricants.

### General Safety Instructions

- Hydraulically operated lubrication pumps model HTL 201:
  - are designed with state-of-the-art technology.
  - can be mounted for safe operation
- Incorrect use may result in bearing damage caused by under- or over-lubrication.
- Modifications or alterations to an installed system by the customer are subject to prior consultation with the manufacturer of the lubrication system or with its appointed dealers.
- Hydraulically operated lubrication pumps model HTL 201:
  - are not to be installed in the lower area of the hammer,
  - must be installed in such a way that the driver/ operator can always see the position of the low-level indicator of the follower piston.
- After each cartridge replacement make sure that the pump delivers lubricant.

### Operation, Maintenance and Repair



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#### ATTENTION!

*Before beginning with maintenance or repair work on the lubrication pump HTL 201, ensure that the hydraulic system of the carrier unit (the supply to the lubrication pump) is depressurized.*

#### ATTENTION!

*It is absolutely forbidden to carry out maintenance or repair work and to replace the cartridge while the hydraulic unit is in operation.*

#### ATTENTION!

*A contamination of the oil strainer (fig. 4-11) can result in poor lubrication of connected lubrication points. Depressurize the carrier unit before disassembling the oil strainer.*

#### CAUTION!

*Risk of injury in case of contact with hot connection parts or hot oil of the driving hydraulics. Let the driving hydraulics cool down before starting any maintenance or repair work to avoid burning or scalding or wear adequate protective clothes.*



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### Operation / Maintenance

Hydraulically operated lubrication pumps HTL 201

- shall be operated only with an installed pressure relief valve
- shall regularly be supplied with clean lubricant cartridges. 150g/310g cartridges can't be refilled.
- operate automatically. However, check at regular intervals (approx. every 2 days) whether the pump effectively delivers lubricant (visual check).

## Safety Instructions, continuation

### Repair

Repairs should only be performed by authorized personnel who are familiar with the repair instructions.

### Disposal

Dispose of used or contaminated lubricants as well as of parts that were in touch with lubricant according to the legal regulations pertaining to environmental protection. Make sure to observe the safety data sheets of the lubricants used.

### Installation



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#### ATTENTION!

*Before installing or disassembling the lubrication pump HTL 201, ensure that the hydraulic system of the carrier unit (the supply to the lubrication pump) is depressurized.*

- It is forbidden to manipulate the protection devices installed on the hydraulic unit.
- If necessary, these devices may be removed temporarily during the installation of the pump.
- The devices must be properly put back in place after installation.
- Use only original spare parts or spare parts and cartridges authorized by Lincoln (see „Parts List“).



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#### IMPORTANT

*Observe the installation guidelines and instructions of the machine/unit manufacturer when drilling and welding, as well as the specified minimum distance on vehicle/chassis frames for holes between upper/lower rim of the frame or between two bore holes.*



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#### IMPORTANT

*For fastening of the HTL 201 pump use cylindrical screws DIN 4762, M10x90.*

### Installation and Maintenance of Hydraulic Hoses



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#### ATTENTION!

*The operational safety of the lubrication pump HTL 201 is only guaranteed with a professional installation and maintenance of hydraulic hoses/lines. The following points must be observed!*

#### Hydraulic Hose/lines

- may never be subjected to torsion
- must be installed twist-free
- must not rub against metal components or edges
- are to undergo regular visual checks and exchanged in the case of wear (or at the latest, 2 years after installation)

Pay attention with non linear installations to allow for as large a bending radius as possible. Kinks are to be avoided. In constricted installation conditions use pipe elbow unions to avoid the danger of kinking behind the hose socket.

## Description

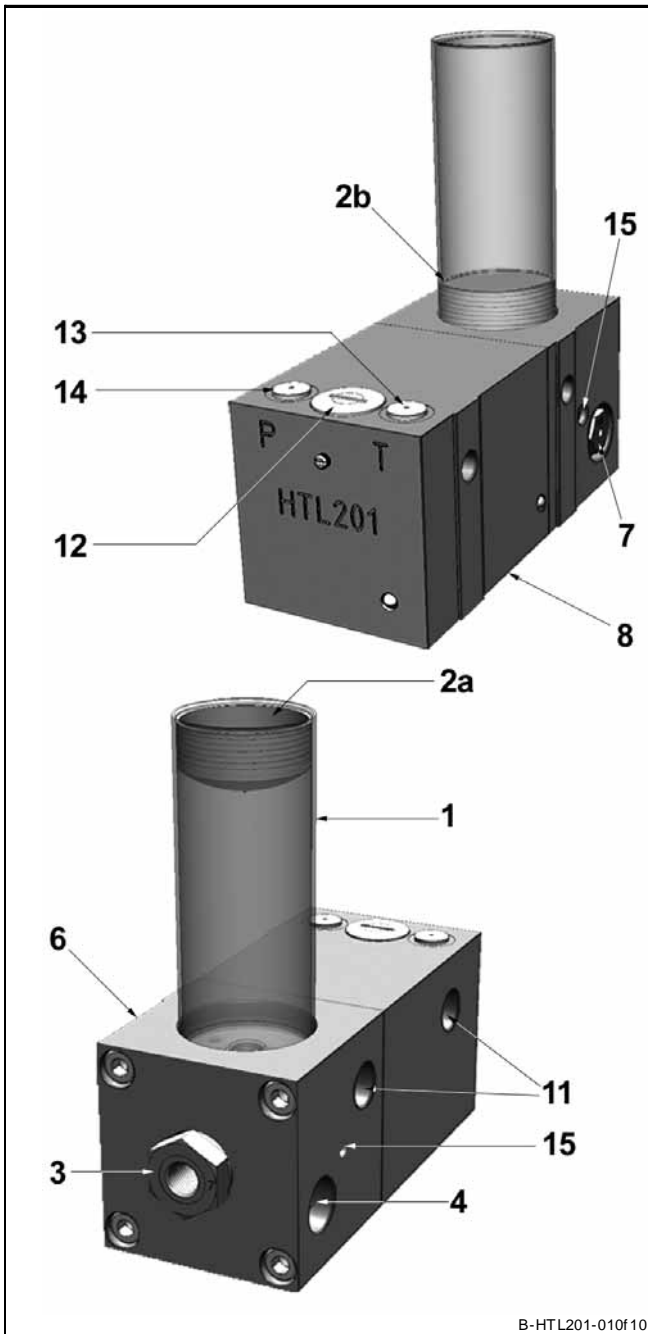


Fig. 1-1 Components of the Lubrication Pump HTL 201

- 1 - Cartridge <sup>1)</sup>
- 2a - Follower piston, cartridge full
- 2b - Low-level position (window) of the follower piston, cartridge empty
- 3 - Pump element, lubricant outlet, G 1/4
- 4 - Hydraulic lubrication fitting G 1/8, für manuelles Absmieren
- 6 - Cartridge housing
- 7 - Pressure relief valve 120 bar
- 8 - Control housing
- 11 - Fastening holes for M 10 bolts
- 12 - Throttle below closure plug 12.1
- 13 - Return connection <sup>1)</sup> T, G 1/4
- 14 - Pressure connection <sup>1)</sup> P, G 1/4
- 15 - Cylinder screw M4 x 12 for bleeding

### The Pump Model HTL 201

- is a hydraulically driven grease pump for the lubrication of hydraulic hammers or other units with an available hydraulic circuit.
- is compact and can therefore be fitted directly to the carrier device. Together with the carrier device it forms a complete assembly.
- is driven by the hydraulic system of the carrier.
- continuously delivers lubricant to the lubrication point while the hydraulic unit is in operation and stops when the hydraulic flow stops. The lubricant quantity is adjustable via the regulating throttle valve (see Fig. 4).
- is equipped with a visual lubricant level indicator by means of the follower plate of the cartridge. If the follower plate is located in the low-level position of the cartridge 2b, the cartridge must be replaced.
- is protected by means of a 120 bar pressure relief valve 7 (see Fig. 6).
- is equipped with an exchangeable pump-element piston-unit.
- is equipped with a lubrication hydraulic fitting 4 for manual lubrication override (e.g. if the hydraulic system fails to operate).
- does not require supplementary directional valve.



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#### <sup>1)</sup> NOTE

Connecting fittings 13 & 14 and grease cartridges 1 are *n o t* included in the scope of delivery and have to be ordered separately.



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#### ATTENTION!

Pressure connection 14 (P) and return-line connection 13 (T) must not be mixed up.



## Mode of Operation

### HTL 201

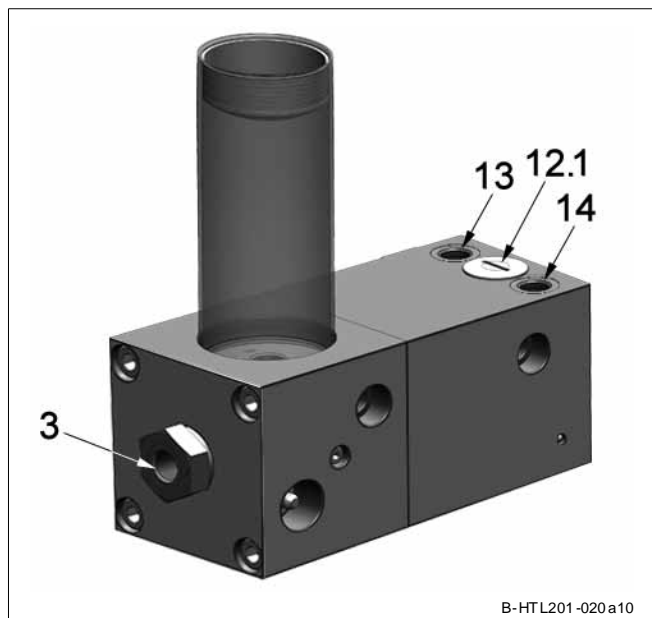


Fig. 2-1 Hydraulic oil connections of the lubrication pump HTL 201

➔ The HTL 201 lubrication pump is connected by means of the following connecting fittings:

- 3 - Lubricant outlet, G ¼
- 12.1 - Throttle below closure plug
- 13 - Return connection T, G ¼
- 14 - Pressure connection P, G ¼ with integrated oil strainer

- The flow rate and thus the output of the pump can be adapted according to the output diagram (fig. 6-1 to 6-3) via the regulating throttle valve 12. 16 notches of the regulating throttle correspond to one full revolution.
- The oil flows via the pressure connection 14 (resp. P) through an integrated strainer to the control piston.
- In parallel, the also activated supply piston moves a pre-metered amount of lubricant to the lubricant outlet 3.
- The oil is returned to the driving system of the carrier unit via the relief line connection 13 (resp. T) <sup>1)</sup>.

<sup>1)</sup> incl. check valve

## Setting and Operation

### Basic Adjustment of the Throttle

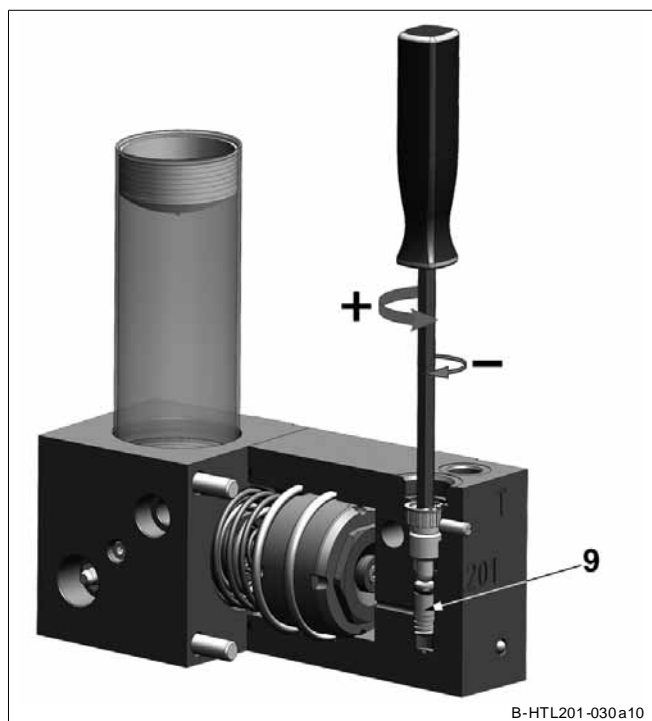


Fig. 3-1 Throttle Valve Adjustment

- ➔ Remove closure plug 12.1 (Fig. 2-1) of the throttle 9.
- ➔ The throttle 9 is factory-set to grid 80 (see Flow Rate Diagrams fig. 6-1 to 6-3).
- ➔ Turn the throttle screw 9 according to the lubricant requirement:
  - turning clockwise (-) ..... less lubricant
  - turning anticlockwise (+) ..... more lubricant
- ➔ Close closure plug 12.1 of throttle 9 again to protect throttle against contamination.



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#### IMPORTANT

Observe the specified lubricant quantities (see Fig. 6-1 to 6-3).



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#### ATTENTION!

To adjust the throttle, stop the hydraulic system operation. The throttle may still be pressurized for a long time after switching off the hydraulic unit. Always check first whether the pressure connection 14 (P, fig. 2-1) is depressurized.

9 - Throttle valve



## Setting and Operation, continuation

### Pump element

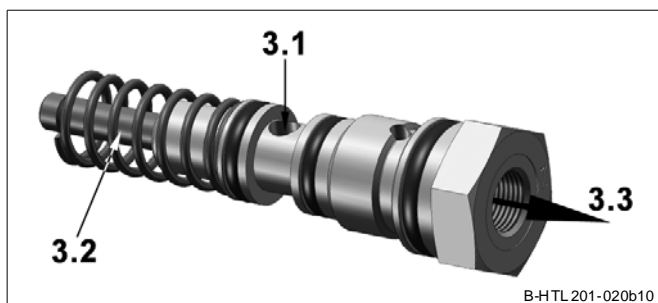


Fig. 3-2 Pump element (Pos. 3)

During the operation the piston 3.2 (Fig. 3-2) sucks in lubricant from the cartridge via the suction bore hole 3.1 and delivers it to the connected lubrication point through the lubricant outlet 3.3. An integrated check valve prevents the lubricant from returning to the cartridge.

Piston diameter ..... 7 mm

Lubricant output ..... approx. 0.22 ccm/stroke

3.1 - Suction bore

3.2 - Piston

3.3 - Lubricant outlet, G ¼

### Pressure Relief Valve

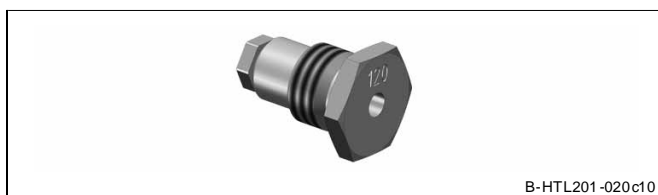


Fig. 3-3 Pressure Relief Valve (pos. 7)

The pressure relief valve

- limits the pressure build-up in the system.
- opens when a pressure of 120 bar is reached. Alternatively, in the case of higher supply pressure a pressure-relief valve for a max. overpressure of 270 bar can be used.



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#### NOTE

*If lubricant is expelled at the pressure relief valve, this indicates that there is a blockage to, or at the lubrication point.*

#### IMPORTANT

*When using chisel pastes, the outlet pressure P must not exceed 100 bar.*

Maintenance



**CAUTION!**  
*Risk of injury in case of contact with hot connection parts or hot oil of the driving hydraulics. Let the driving hydraulics cool down before starting any maintenance or repair work to avoid burning or scalding or wear adequate protective clothes.*



**ATTENTION!**  
*Do not perform any maintenance or repair work or replace the cartridge while the hydraulic system of the carrier device is in operation.*

**ATTENTION!**  
*Before beginning with maintenance or repair work on the lubrication pump HTL 201 and before dismantling it, ensure that the hydraulic system of the carrier device is depressurized.*

Lubricant Cartridge

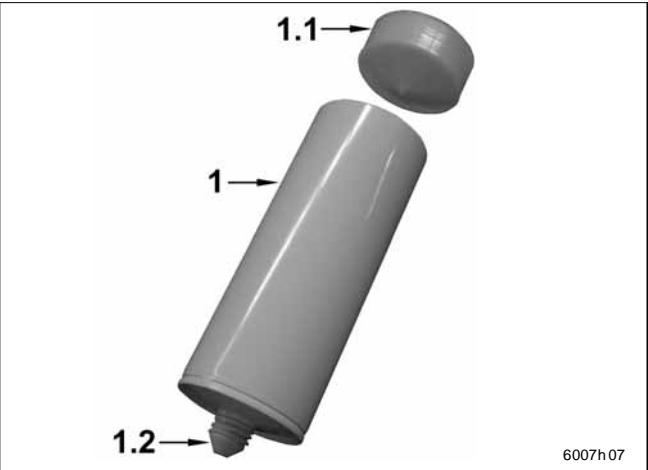


Fig. 4-1 Lubricant Cartridge

Capacity ..... 150 g / 310 g  
Lubricant ..... up to NLGI class 2



**NOTE**  
*Cartridges are not included in the scope of delivery and must be ordered separately.*

**IMPORTANT**  
*Never try to refill emptied cartridges!  
After use dispose of emptied cartridges according to the legal regulations pertaining to environmental protection.*

- 1 - Cartridge
- 1.1 - Follower plate
- 1.2 - Tip of thread throat

Adapter

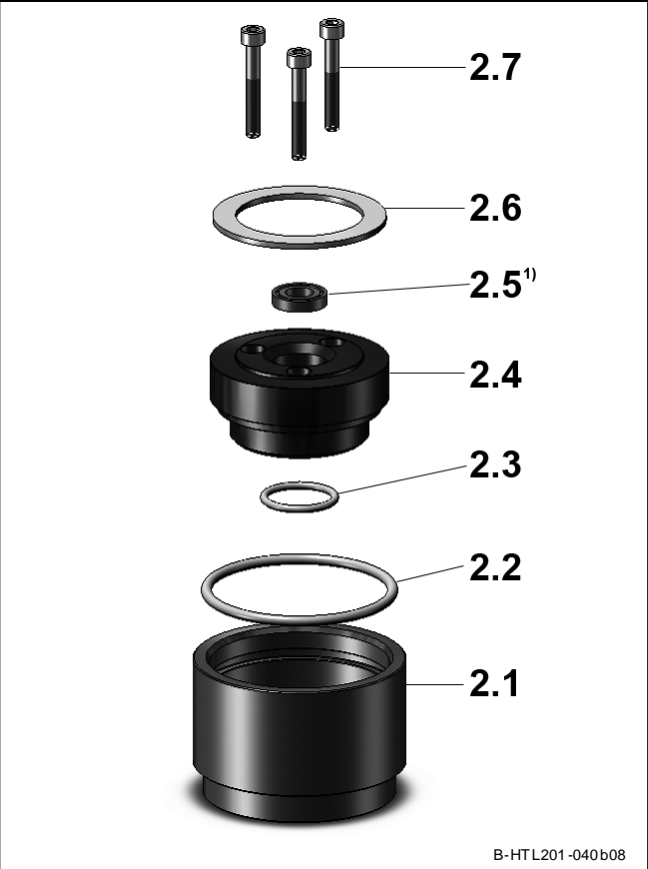


Fig. 4-2 Adapter for lubricant cartridges

➔ Before the replacement or first insertion of a 380 g, 400 g- or 500 g- cartridge, an adapter (Fig. 4-2) must be mounted to the housing of the cartridge 6 (Fig. 1-1).

Designation	Positions (Fig. 4-2)							Part no.
	2.1	2.2	2.3	2.4	2.5	2.6	2.7	
Adapter 380 g <sup>1)</sup> , TR (Trapezoidal thread)	x	x	x	x	x	x	x	542-33136-1
Kit of seals <sup>1) &amp; 2)</sup>		x			x	x		542-34079-1
Adapter 400 g <sup>1)</sup> , RD (Round thread)			x	x			x	542-33133-1
Adapter 500 g <sup>3)</sup> , TR (Trapezoidal thread)	x	x	x	x		x	x	542-33135-1

<sup>1)</sup> for 380 g-lubricant cartridges  
<sup>2)</sup> see Installation Instructions 2.0L-30008-B08/part no. 810-55488-1  
<sup>3)</sup> for 500 g lubricant cartridges

- 2.7 - Hexagonal socket head screws M5x35
- 2.6 - Flat packing NBR
- 2.5 - Sealing ring PU90
- 2.4 - Adapter
- 2.3 - O ring NBR
- 2.2 - O ring NBR
- 2.1 - Tubular support

Subject to modifications

## Maintenance, continuation

### Filling of Reservoir

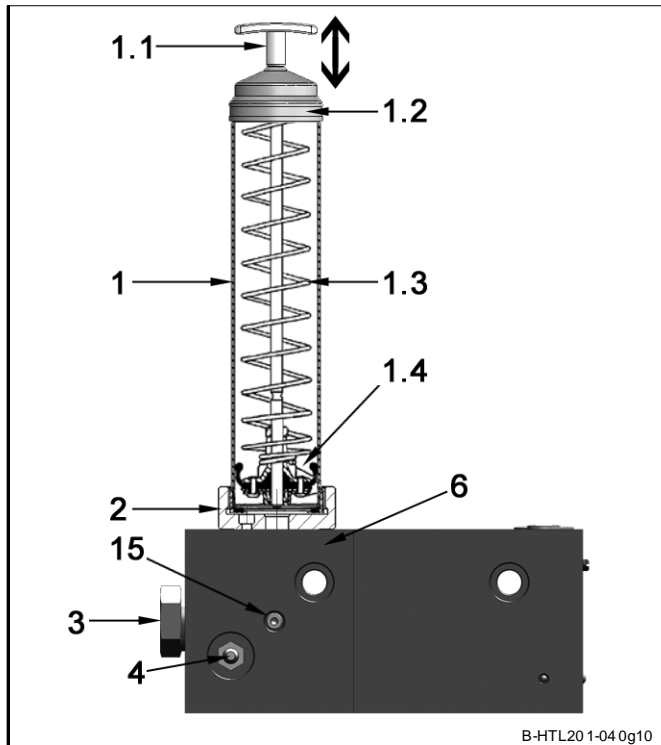


Fig. 4-3 Filling-level control of the press container

- |   |                       |
|---|-----------------------|
| 1 - Press container   | 1.2 - Closure cap     |
| 1.1 - Hand lever  | 1.3 - Spring          |
| 1.3 - Spring  | 1.4 - Follower piston |
| 2 - Adapter   |                       |
| 3 - Pump element - lubricant outlet, G 1/4                      |                       |
| 4 - Hydraulic lubrication fitting G 1/8, for manual lubrication |                       |
| 6 - Cartridge housing   |                       |
| 15 - Cylinder screws M4 x 12 for bleeding                       |                       |

#### Operation with lubricant cartridge

- Replace the emptied lubricant cartridge (150 g / 310 g) as soon as its follower piston has sunk down to the cartridge housing 6.



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#### NOTE

*Cartridges (150 g/310 g; 380 g) are not included in the scope of delivery, but have to be ordered separately.*

#### IMPORTANT

*Dispose of emptied cartridges according to the legal regulations pertaining to environmental protection.*

#### Operation with press container

- Fill the press container with lubricant (or with a 380 g lubricant cartridge as soon as the hand lever 1.1 has sunk as shown in Fig. 4-3.

## Maintenance, continuation

### Operation with press reservoir, continuation

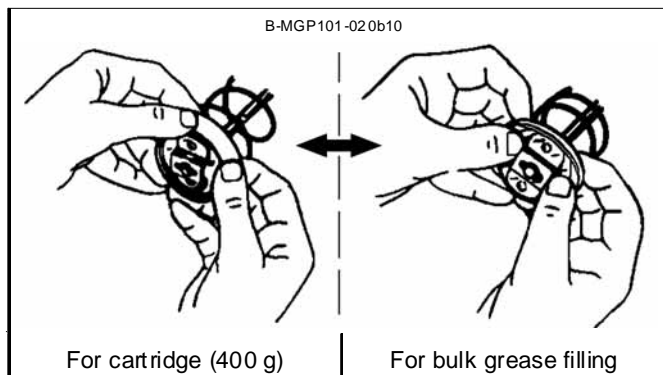


Fig. 4-4 Adjustment of the follower piston packing

### Filling

- Operation with lubricant cartridge (150 / 310 g):  
(without press reservoir)

- If required, remove empty cartridge
- 1. Cut off cone point of the thread throat of the new cartridge.
- 2. Push follower piston into the cartridge pressing it lightly until grease leaks from the open thread throat.
- 3. Insert cartridge with light pressure into the bore of the HTL housing and hand-tighten it.
- 4. Remove trapped air, if any (see chapter "Vent housing").

- Operation with lubricant cartridge (400 g):  
(with press reservoir)

- 1. Remove grease reservoir fittings from the HTL adapter.
- 2. Pull back the follower rod together with the follower piston by means of the hand lever from the press reservoir to that extent that the nut in the follower rod engages in the notch of the reservoir's closure cap.

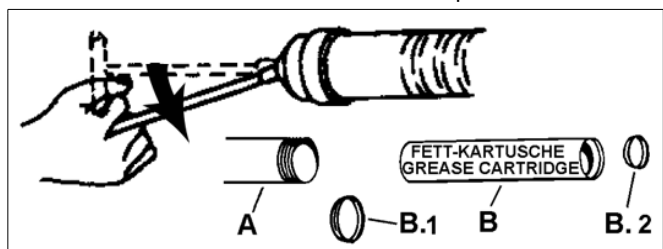


Fig. 4-5 Engaging of the follower rod

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- 3. Use the hand lever to carefully unlock the follower rod and let it return into the press reservoir thus discharging the empty cartridge.
- For initial filling with 400g lubricant cartridge adapt filling variant, if necessary (see Fig. 4-4).
- 4. Remove plastic sealing cover (B.1) from grease cartridge (B) and push cartridge with that side into the press reservoir (A).
- 5. Remove tear-off lid (B.2) from the grease cartridge and then screw the grease reservoir fittings to the HTL adapter.
- 6. Unlock the follower rod from the reservoir's closure cap.
- 7. Remove trapped air, if any (see chapter "Vent housing").

- Adjust filling variant:

- Unscrew the reservoir (grease gun) from the housing of the HTL.
- Check the follower piston packing and adjust it if necessary:
- 1. Unscrew reservoir closure cap.
- 2. Pull the follower rod together with the spring and the follower piston out of the press reservoir by means of the hand lever.
- 3. Evert packing of follower piston (see Fig. 4-4)
- 4. Proceed with re-assembly of follower piston.
- 5. Screw closure cap to press reservoir again.

- Operation with bulk grease filling in press reservoir:

- For initial filling with bulk grease filling adapt filling variant, if necessary (see Fig. 4-4).
- 1. Remove grease reservoir fittings from the HTL adapter.
- 2. Immerge the open end of the press reservoir into the grease container. Slowly pull the hand lever backwards while following the sinking filling level in the grease container. This will prevent air from being sucked into the press reservoir during the filling procedure (Fig. 4-6).

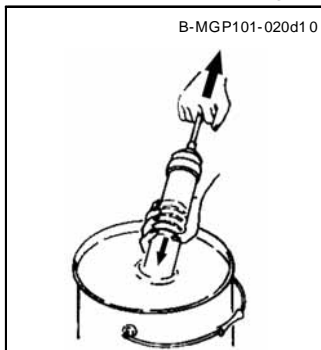


Fig. 4-6 Suction

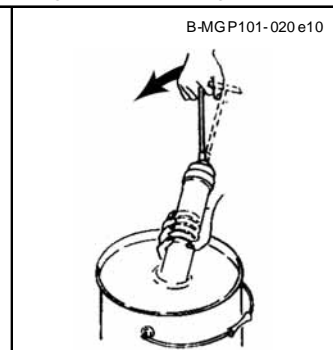


Fig. 4-7 Engaging

- 3. Pull back the follower rod together with the follower piston by means of the hand lever from the press reservoir to that extent that the nut in the follower rod becomes visible and engages in the notch of the reservoir's closure cap (Fig. 4-7).
- 4. Screw the filled press reservoir again.
- 5. Disengage the follower rod from the reservoir's closure cap by means of the hand lever.
- 6. Remove trapped air, if any (see Chapter "Vent housing").



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### CAUTION!

*Risk of injury by unwanted resilience of follower rod.  
If engaged inaccurately (Fig. 4-6) the follower rod may unlatch unwantedly.  
Make sure the latching function works properly and prevent unintended unlatching.*

## Maintenance, continuation

### Reservoir for Oil

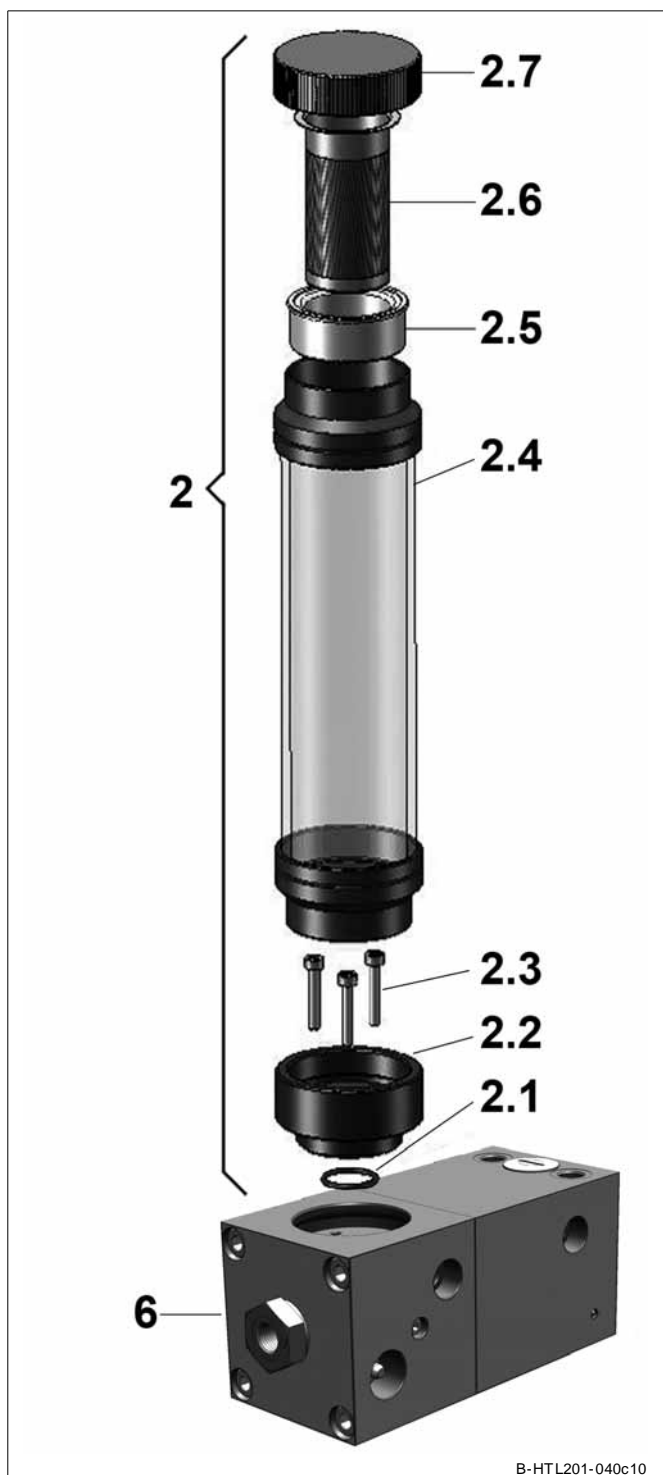


Fig. 4-8 Reservoir for oil, assy.

- Before the replacement or first insertion of a reservoir for oil 2 (Fig. 4-8) an adapter (pos. 2.1 to 2.3) must be mounted to the housing of the cartridge 6.

Designation	Position 2 (Fig. 4-8)							Part no.
	2.1	2.2	2.3	2.4	2.5	2.6	2.7	
Reservoir for oil	x	x	x	x	x	x	x	542-33134-1

#### Filling:

- Untighten the screw top 2.7 from the reservoir 2.4.
- Fill in the lubricating oil through the filter 2.6.
- Close the reservoir 2.4 again with the screw top after filling 2.7.

- 2 - Reservoir for oil, assy.
- 2.7 - Screw top
- 2.6 - Strainer
- 2.5 - Strainer insert
- 2.4 - Reservoir
- 2.3 - Hexagonal socket head screws M5x25
- 2.2 - Adapter
- 2.1 - O-ring
- 6 - Cartridge housing

## Maintenance, continuation

### First insertion of cartridge

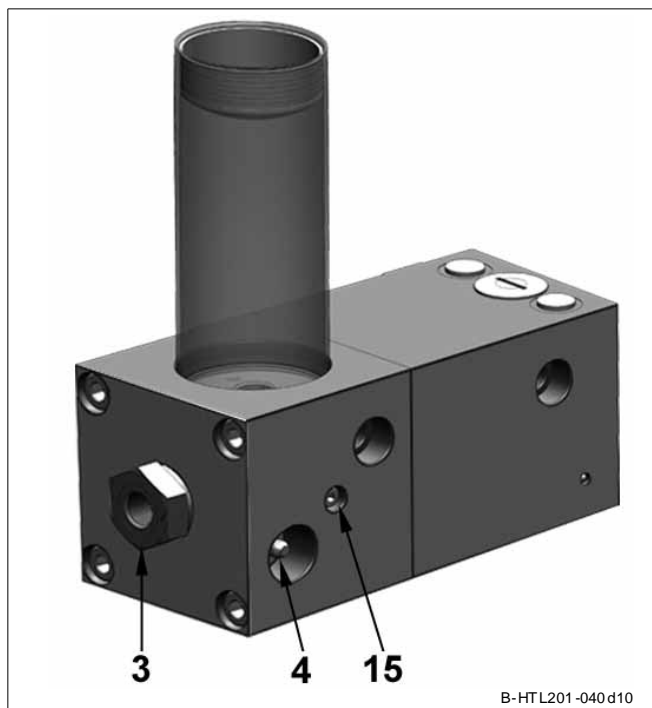


Fig. 4-9 Insert cartridge into the lubrication pump HTL 201

3 - Pump element  
4 - Lubrication fitting for manual lubrication  
15 - Cylinder head screw

- Lightly grease the inner o-ring.
- Cut off tip of thread throat 1.2 (Fig. 4-1) of the new cartridge.
- Insert the cartridge in the bore by lightly pressing and screw it into the housing (presented as in Fig. 4-9) hand-tightly.
- Vent housing:
  - Remove cylinder head screw 15 from front or rear side
  - Press follower piston 1.1 (Fig. 4-1) into the cartridge until lubricant comes out of the open bore hole 15
  - Close housing with cylinder head screw 15 (Fig. 4-9) again
- Operate the pump by switching on the hydraulic unit until lubricant flows out of the opened pump element 3.



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#### NOTE

*The pump delivers lubricant very slowly. It may take a while before the lubricant flows out of the outlet without air bubbles.*

- Connect the supply hose (primed where applicable) to the lubrication point with pump element 3.
- Manual lubrication is possible via the hydraulic lubrication fitting 4 by means of a manually operated grease gun.

### Cartridge Replacement



Fig. 4-10 Cartridge Replacement

- Switch off the carrier device.
- Unscrew the old cartridge.
- Cut off the point of the thread throat 1.2 (Fig. 4-1) of the new cartridge.
- Press the follower piston 1.1 (Fig. 4-1) slightly until grease comes out of the cartridge.
- Press cartridge slightly into the cartridge, the screw it into the housing hand-tightly (as shown in Fig. 4-10).
  - The pump is ready for operation again



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#### NOTE

*If afterwards the pump does not dispense lubricant immediately, vent the housing (see paragraph "vent housing", Fig. 4-9).*

## Maintenance, continuation

### Cleaning the Oil Strainer

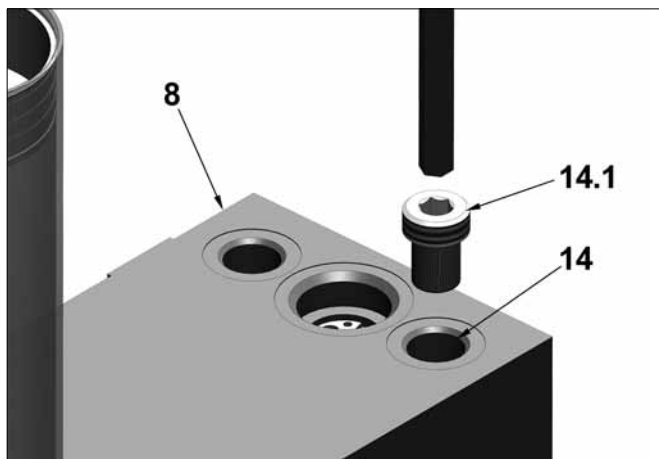


Fig. 4-11 Oil Strainer in the control housing

B-HTL 201-040f10

The oil strainer should be cleaned every 1000 operating hours at the latest. To do this, proceed as follows:

- Completely relieve pressure of hydraulic system on carrier device.
- Remove the pressure line to the lubrication pump HTL 201.
- Oil Strainer 14.1 (Fig. 4-11)
  - Unscrew oil strainer 14.1 (Fig. 4-11) from control housing 8.
  - Remove and clean oil strainer.
  - Screw oil strainer back into the control housing 8 again

8 - Control housing

14 -Pressure connection P, G ¼

14.1 - Oil Strainer

## Identification Code

### Example of a type designation

**HTL**

Hydraulic Tool Lubrication

**Version (type series)**

Application

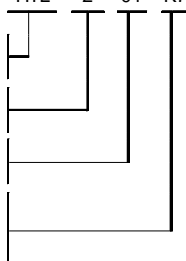
**Number of pump elements**

**C7 =** Piston diameter 7 mm for chisel paste (increased fit-tolerance)

**K7 =** Piston diameter 7 mm for grease

HTL - 2 01 - C7

HTL - 2 01 - K7



### NOTE

Part numbers see "Parts List".

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Technical Data

Rating

Hydraulic system (Carrier device):

Hydraulic input pressure P ..... 80 to 210 bar  
min. run-in pressure ..... 30 bar

Lubrication Pump HTL 201

Output ..... 0.22 ccm/stroke  
max. operating pressure (lubricant):  
- D Pressure relief valve, standard ..... 120 bar  
- Pressure relief valve, optionally ..... 270 bar  
Admissible operating temperature <sup>1)</sup> ..... -25 °C to +75 °C <sup>2)</sup>  
Ratio ..... 50 : 1  
<sup>2)</sup> Oil temperature

Standard Fitting Connections

Pressure connection P ..... G ¼"  
Return connection T ..... G ¼"  
Feed line..... G ¼"

Factory Output Settings

Throttle ..... completely opened  
max. output ..... depending on input pressure P

Tightening Torques

Hydraulic fitting (4) ..... 14 Nm ± 5 %  
Valve insert (7) ..... 8 Nm ± 10 %  
Cylinder head screws M4 x 12 (15) ..... 3 Nm ± 10 %  
Cylinder head screws M8 x 80 (9) ..... 15 Nm ± 10 %  
Fixing screws M10x90 ..... 70 Nm – 10 %



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<sup>1)</sup> IMPORTANT

*The specified "admissible operating temperature" refers to the pump and the components of the entire lubrication system, but not to the lubricant to be supplied.*

*Therefore, please observe that the transportation of the lubricant in a system depends on the lubricant's flow properties. The "admissible operating temperature of the lubricant" may differ from the system operating temperature and has to be verified separately! For applicable lubricants also see User Manual 2.0-4000 1, chapter "Approved lubricants".*

Dimensions

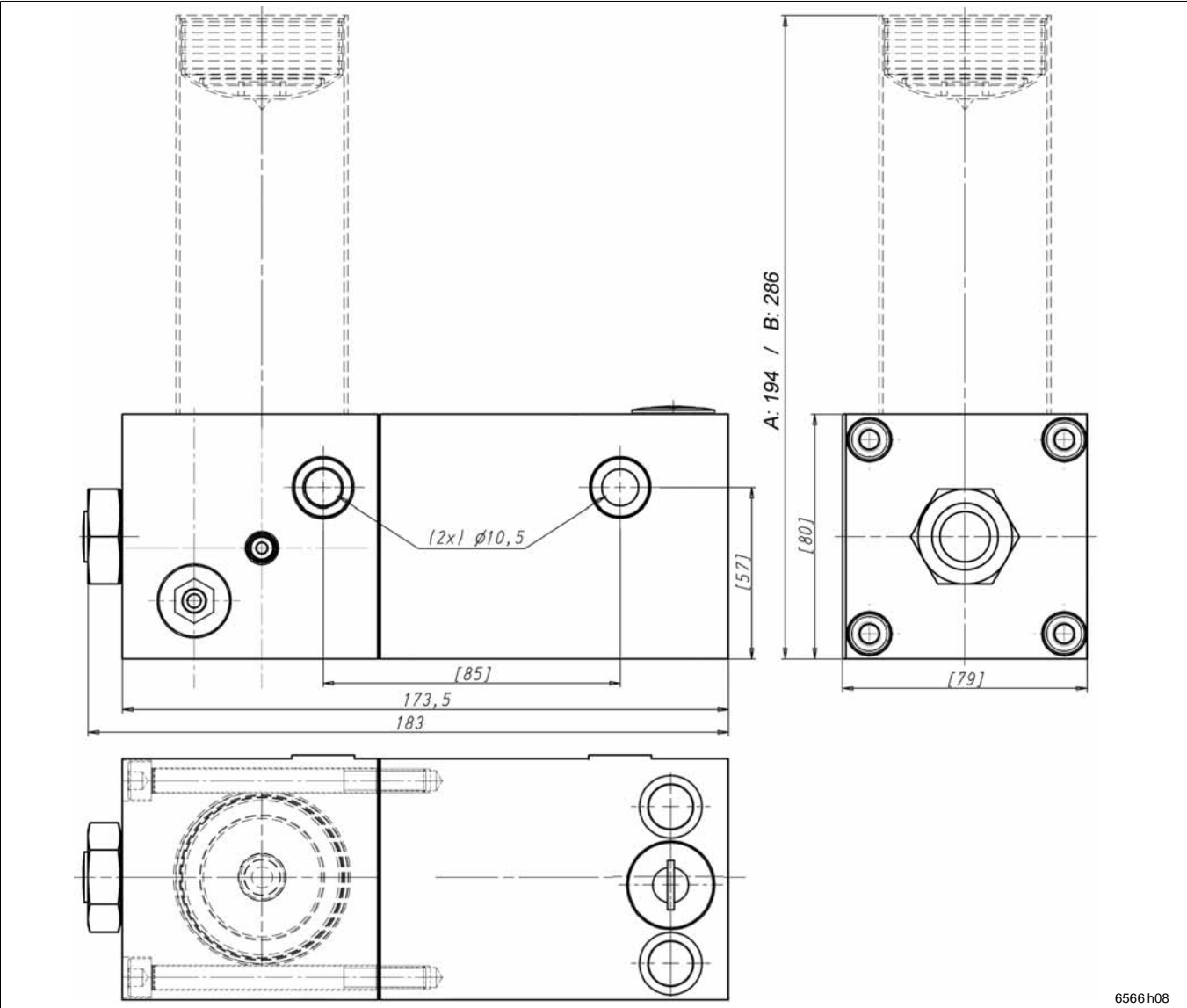


Fig. 5-1 Dimensions of the Hydraulic Lubrication Pump HTL 201 with cartridge  
(all dimensions in mm)

A: Height 194 mm with 150 g cartridge  
B: Height 286 mm with 310 g cartridge

## Technical Data, continuation

### Flow Rate Diagram

The lubricant flow rate as a function of the throttle setting at different pressures can be read from the following flow rate diagram. The throttle valve is provided with notches, whereby 16 notches correspond to one complete revolution of the throttle.

The output results from the throttle revolutions and the use of the use of a pump element with an output of 0.22 ccm/stroke.  
Max. output ..... 6.7 ccm/min  
(at 200 bar and max. opening of throttle)

**Lubricant Output HTL 201 (at 80 bar and 40 °C operating temperature, 100 bar back-pressure)**

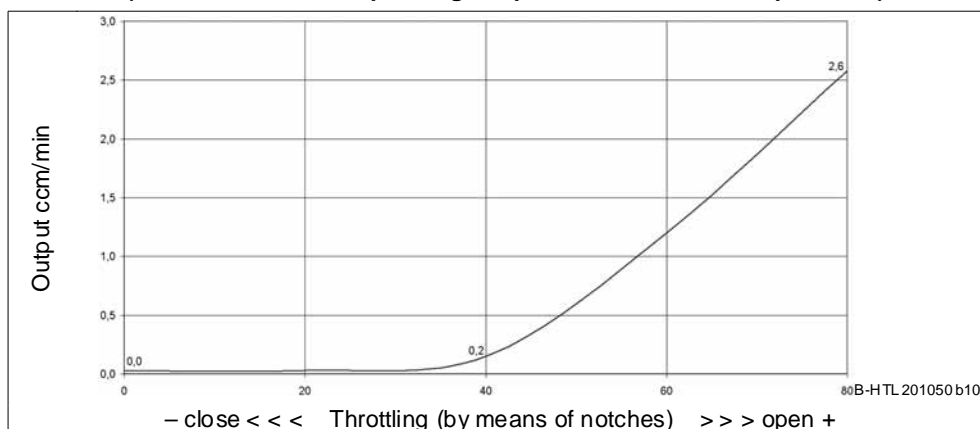


Fig. 6-1 Flow rate diagram at 80 bar (averaged curve progression)

**Lubricant Output HTL 201 (at 140 bar and 40 °C operating temperature, 100 bar back-pressure)**

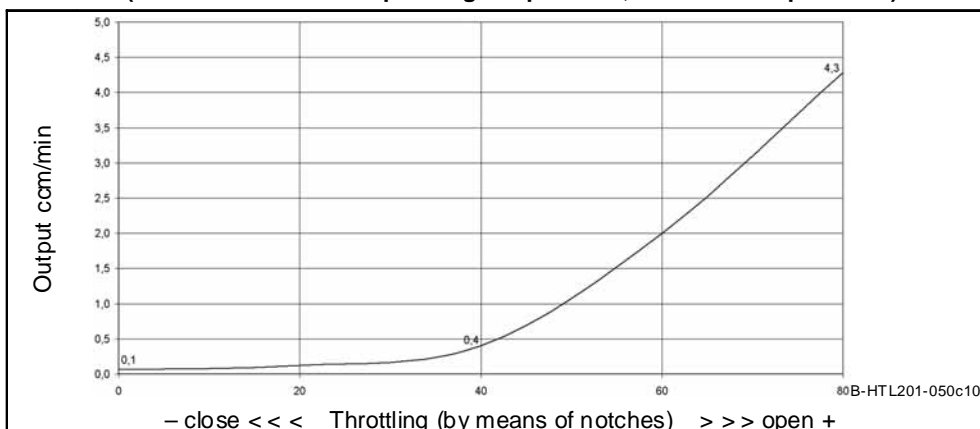


Fig. 6-2 Flow rate diagram at 140 bar (averaged curve progression)

**Lubricant Output HTL 201 (at 200 bar and 40 °C operating temperature, 100 bar back-pressure)**

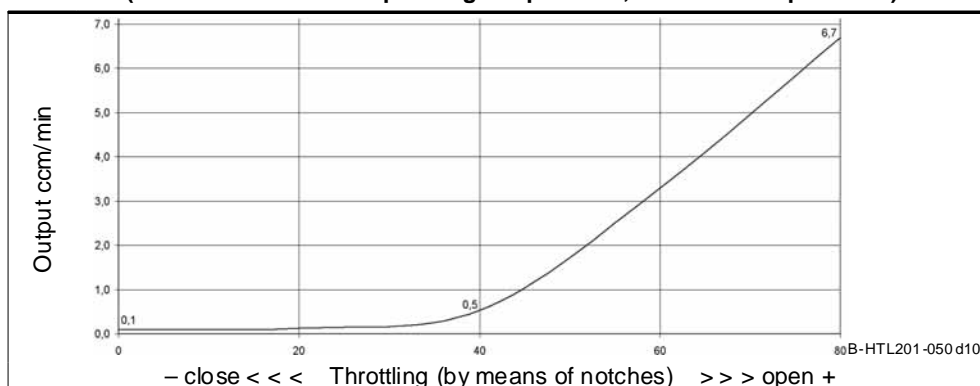


Fig. 6-3 Flow rate diagram at 200 bar (averaged curve progression)

## Technical Data, continuation

### Hydraulic Circuit

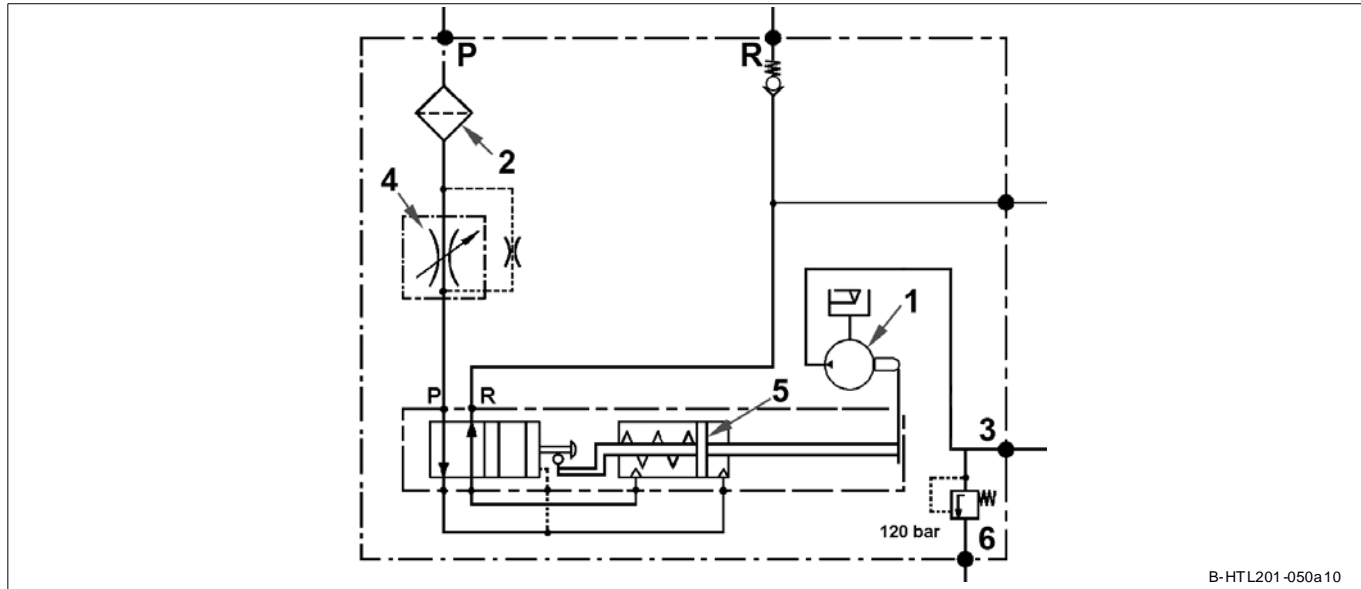


Fig. 7-1 Hydraulic Circuit HTL 201

1 - Mechanical pump (pump element)  
4 - Throttle, adjustable  
P - Pressure connection

2 - Oil strainer  
5 - Rearrangement piston  
R - Return connection (T)

3 - Lubricant outlet  
6 - pressure relief valve 120 bar

## Troubleshooting

<b>Fault: Pump does not deliver the lubricant</b>		
<b>Cause:</b>	<b>Remedy ...</b>	<b><u>by operator personnel</u></b>
• Cartridge empty	➔ Replace the cartridge (see Fig. 4-10).	
• Lubricant supply blocked	➔ Check the cartridge.	
• Air entrapments in the suction area of the cartridge	➔ Vent housing (see Fig. 4-9) „First Insertion of cartridge“.	
<b>Cause:</b>	<b>Remedy ...</b>	<b><u>by service personnel</u></b>
• No oil pressure supply	➔ Check the hydraulic system and repair it. ➔ Check the tube and hose lines and replace them.	
• Clogged oil strainer	➔ Fully relieve pressure of hydraulic system on carrier unit. ➔ Clean oil strainer (see Fig. 4-11).	
<b>Fault: Lubricant quantity too low</b>		
<b>Cause:</b>	<b>Remedy ...</b>	<b><u>by service personnel</u></b>
• Throttle not adjusted correctly	➔ Turn the throttle anticlockwise by 1 to 2 notches (more lubricant will flow out); see Fig. 3-1.	
• Clogged oil strainer	➔ Fully relieve pressure of hydraulic system on carrier unit. ➔ Clean oil strainer (see Fig. 4-11).	
<b>Fault: Lubricant quantity too high</b>		
<b>Cause:</b>	<b>Remedy ...</b>	<b><u>by service personnel</u></b>
• Throttle not adjusted correctly	➔ Turn the throttle clockwise by 1 to 2 notches (less lubricant will flow out); see Fig. 3-1.	
<b>Fault: Lubricant leaking at the cartridge inlet</b>		
<b>Cause:</b>	<b>Remedy ...</b>	<b><u>by service personnel</u></b>
• Leakage	➔ Check the sealing ring in the pump unit and replace it if necessary ➔ Check whether the cartridge is threaded correctly (hand-tight seat).	
<b>Fault: Lubricant leaking at the grease outlet</b>		
<b>Cause:</b>	<b>Remedy ...</b>	<b><u>by service personnel</u></b>
• Leakage	➔ Check the fittings and retighten them if necessary.	
<b>Fault: Oil pressure leaking at the hydraulic system</b>		
<b>Cause:</b>	<b>Remedy ...</b>	<b><u>by service personnel</u></b>
• Leakage	➔ Check the fittings and retighten them if necessary.	
<b>Fault: Lubricant leaking at the pressure relief valve</b>		
<b>Cause:</b>	<b>Remedy ...</b>	<b><u>by service personnel</u></b>
• Blockage in lubricant feed line or at lube point	➔ Check the lubricant feed lines and the lube points for possible causes of blockage.	
• Backpressure in the feed lines too high	➔ Check whether the standard pressure relief valve (120 bar) is sufficient. If necessary, use the optional pressure relief valve with 270 bar.	

Tab. 1 Troubleshooting

Exploded Drawing and Parts List

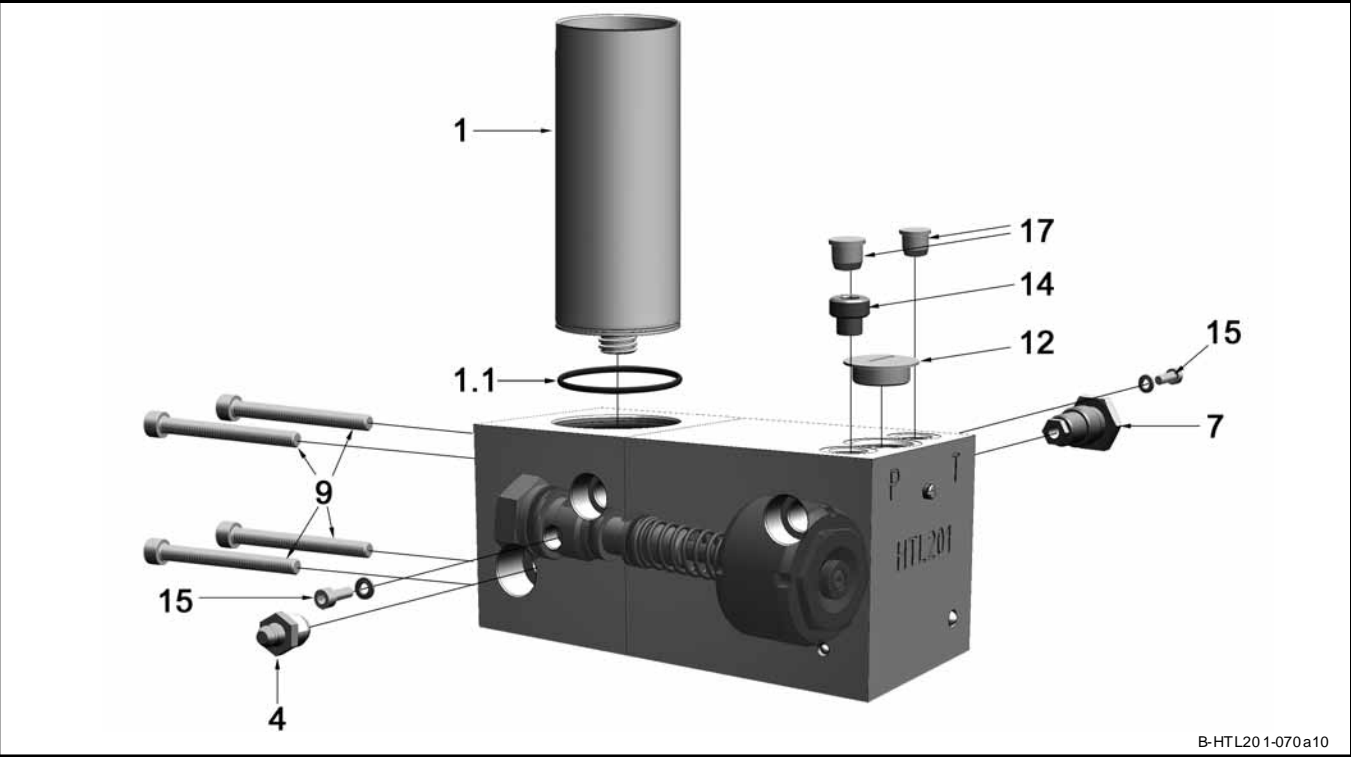


Fig. 8-1 Exploded Drawing and Parts List

## Exploded Drawing and Parts List, continuation

### Parts List

Pos.	Description	Qty.	Part-Number
	HTL 201 with pump element C7	1	642-41 184-1
	HTL 201 with pump element K7	1	642-41 184-2
1	Cartridge with chisel paste, 150 g	12	642-37 608-4
	Cartridge with EP 2 gease, 150 g	12	642-37 609-3
	Cartridge with, 310 g	12	642-37 636-2
	Cartridge with EP 2 gease, 310 g	12	642-37 609-4
1.1	Gasket for cartridge	1	219-10555-1
4	Hydraulic fitting 1/8 "	1	251-14 109-6

Pos.	Description	Qty.	Part-Number
7	Pressure relief valve 120 bar	1	235-14343-5
	Pressure relief valve 270 bar (optionally)	1	235-14343-2
9	Cylinder head screw M8 x 80	4	201-10431-7
12	Closure plug M20 x 1,5 for throttle	1	442-72445-1
14	Oil strainer, assy.	1	447-72394-1
15	Cylinder head screw 8.8 M4 x 12	3	201-12015-9
	Threaded packing GM1000 M4	3	220-14101-3
17	Plug TL-4-119 D11,9	4	233-13100-2

Tab. 3 Parts List



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#### NOTE

Connecting fittings and cartridges are not included in the scope of delivery and must be ordered separately.

### Accessories

Pos.	Description	Qty.	Part Number
	Adapter kit for 380 g cartridge, trapezoidal thread TR 22 x 2,75 (see Fig. 4-2)	1	542-33136-1
	Kit of seals for 380 g cartridge TR (see Fig. 4-2)	1	542-34079-1
	Adapter kit for 400 g cartridge, round thread RD 15 x 2,5 (see Fig. 4-2)	1	542-33133-1
	Adapter kit for 500 g cartridge, trapezoidal thread TR 20 x 2,5 (see Fig. 4-2)	1	542-33135-1
	Reservoir for oil incl. strainer and adapter kit (see Fig. 4-8)	1	542-33134-1
	Reservoir, transparent incl. adapter (see Fig. 4-2)	1	542-33430-1
	Reservoir, steel incl. adapter (see Fig. 4-2)	1	542-33472-1

Tab. 4 Accessories

[illegible]



D	GB	F	E	I
EG- Einbauerklärung	EC Declaration of incorporation	Déclaration CE d'incorporation	Declaración CE de incorporación	Dichiarazione CE di incorporazione

Hiermit erklären wir, dass die Bauart von

Herewith we declare that the model of

Par la présente, nous déclarons que le produit ci-dessous

Por la presente, declaramos que el modelo suministrado

Si dichiara che il prodotto da noi fornito

## HTL 201

in der von uns gelieferten Ausführung zum Einbau in eine Maschine bestimmt ist und dass ihre Inbetriebnahme solange untersagt ist, bis festgestellt wurde, dass die Maschine, in die das o. g. Produkt eingebaut werden soll, den Bestimmungen aller einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen entspricht, einschließlich deren zum Zeitpunkt der Erklärung geltenden Änderungen. Der Hersteller verpflichtet sich, technische Dokumente (gem. Anhang VII Teil B) bei begründeter Anfrage zum o. g. Produkt einzelstaatlichen Stellen in gedruckter Form zur Verfügung zu stellen.  
Angewendete harmonisierte Normen, insbesondere:

in the supplied version is intended to be incorporated into machinery and must not be put into service until the machinery into which it is to be incorporated has been declared in conformity with the provisions of the relevant fundamental requirements on health and safety, including all modifications of this directive valid at the time of the declaration. The manufacturer undertakes to make available any technical documents in printed version (following Annex VII Part B) to subnational authorities in the case of reasonable request regarding the above mentioned product.  
Applied harmonized standards in particular:

dans la version dans laquelle nous le livrons, est destiné à être installé sur une machine et que sa mise en service est interdite tant qu'il n'aura pas été constaté que la machine sur laquelle le produit mentionné ci-dessus doit être installé est conforme aux réglementations régissant toutes les exigences fondamentales de sécurité et celles relatives à la santé, y compris les amendements en vigueur au moment de la présente déclaration. Le fabricant s'engage, en cas de demande justifiée, à fournir sous forme écrite aux organismes nationaux respectifs les documents techniques (suivant Annexe VII, Partie B) relatifs au produit ci-dessus.  
Normes harmonisées, notamment :

en la versión suministrada es destinada a ser incorporada en una máquina y que su puesta en servicio está prohibida antes de que la máquina en la que vaya a ser incorporada haya sido declarada conforme a las disposiciones de los requisitos pertinentes y fundamentales de salud y seguridad en su redacción vigente en el momento de instalación. El fabricante se obliga a hacer disponible documentos técnicos (según anexo VII parte B) en versión impresa a entes uniestatales a petición fundada referente al producto arriba mencionado.  
Normas armonizadas utilizadas, particularmente:

nella versione da noi fornita è destinato all'installazione in una macchina e che la relativa messa in esercizio resta vietata fino all'avvenuto accertamento della conformità della macchina nella quale il suddetto prodotto deve essere installato con tutti i requisiti basilari prescritti in termini di sicurezza e di salute, incluse le relative modifiche vigenti al momento della dichiarazione. Il costruttore si impegna a mettere a disposizione la documentazione tecnica (ai sensi dell'Allegato VII parte B) in forma scritta relativa al summenzionato prodotto dietro richiesta motivata presso le singole sedi nazionali.  
Norme armonizzate applicate in particolare:

Maschinenrichtlinie 2006/42/EG	Machinery Directive 2006/42/EC	Directive machines 2006/42/CE	Directiva de máquinas 2006/42/CE	Direttiva Macchine 2006/42/CE
DIN EN ISO 12100 – Teil 1 & 2 Sicherheit von Maschinen Grundbegriffe, allgemeine Gestaltungsrichtlinien	Part 1 & 2 Safety of machinery Basic terms, general design guidelines	Parties 1 & 2 Sécurité de machines Notions fondamentales, directives générales d'élaboration	Parte 1 & 2 Seguridad de máquinas Términos básicos, axiomas generales de diseño	Parte 1 e 2 Sicurezza delle macchine Concetti basilari, principi guida generali
Pumpen und Pumpengeräte für Flüssigkeiten Allgemeine sicherungstechnische Anforderungen	Pumps and pump units for liquids General safety requirements	DIN EN 908 Pompes et groupes de pompes pour liquides Exigences en matière de sécurité technique	Bombas y equipos de bombas para líquidos Prescripciones generales referente a la seguridad	Pompe e dispositivi di pompaggio per liquidi Requisiti generali di sicurezza tecnica
Dokumentationsbevollmächtigter	Documentation agent	Responsable du Service de documentation	Encargado/a de la documentación	Responsabile della documentazione

Wolfgang Studer • Heinrich-Hertz-Str. 2-8 • 69190 Walldorf

Walldorf Oct 12, 2010, ppa. Dr.-Ing. Z. Paluncic  
Director Research & Development

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